From Chaos To Construction

Lessons Learned When Constructing A Permanent HHWCC On A Landfill

Presented to the

California HHW & Used Oil Conference

by

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Integrated Waste Management Department

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7 Years of Planning & Design 1997-2004

- 3 IWMD directors
- 3 HHW program managers
- 4 Reorgs & downsizing
- 2 On-call A&E firms
 - 5 project managers
- 3 IFBs
- 2 CIWMB grant cycles
 - 7th Cycle \$151,443
 - 10th Cycle \$300,000
- Started construction 1/04

Presentation Overview

- Background
 - Integrated Waste Mgt Department
 - HHW collection centers
- Project History
 - Siting to construction
 - Issues & considerations
- Lessons Learned
 - Top 10 list

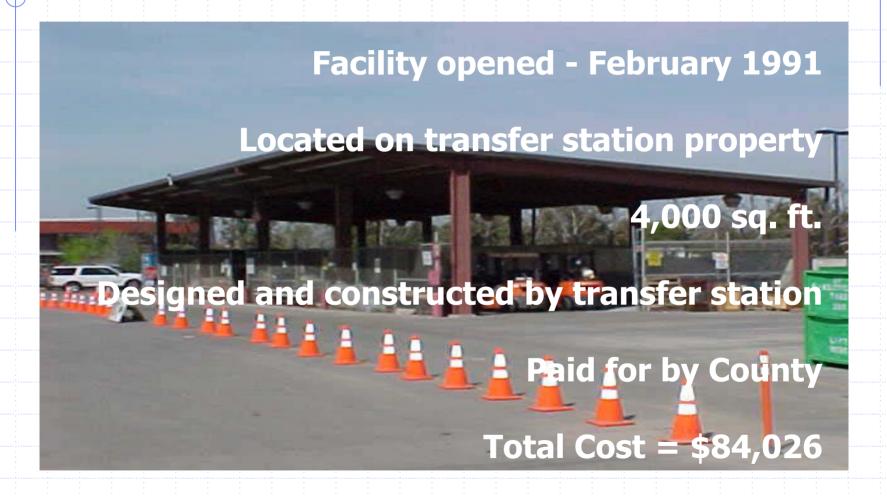
Integrated Waste Management Department (IWMD)

- Owns & operates three landfills
 - 20,500 tons per day
- Household Hazardous Waste Collection Program
 - Four regional permanent HHW collection centers operated under contract
 - 68,224 participants (02/03)
 - 4.4 M lbs collected (02/03)
 - Funded by landfill gate fees

Anaheim HHWCC



Huntington Beach HHWCC

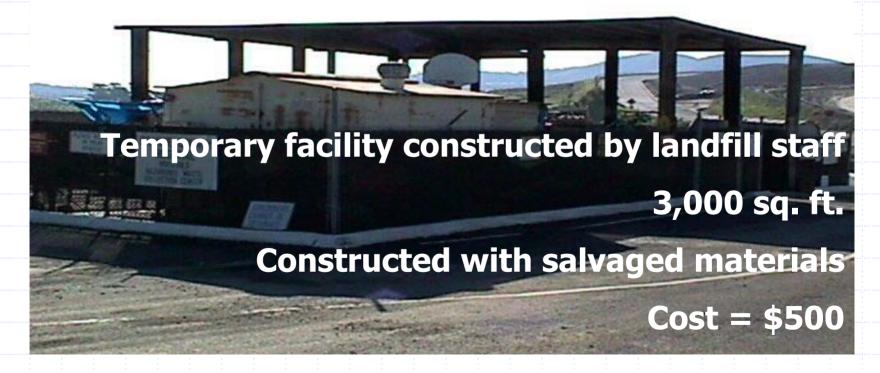


Irvine HHWCC



San Juan Capistrano HHWCC

Facility opened - August 1991 Located on landfill property



Why Relocate?



Finding A New Home

- Committee formed 1/98 to search for new south county site
- Private solid waste hauler yard; site too remote
 & road unsafe
- Real estate search no existing buildings large enough to accommodate traffic flow. Limited availability of vacant land
- Federal Building no hazardous waste allowed
- City & County Properties good idea, facilities too small, limited public access, traffic issues
- Last Option: Relocate on the Landfill easy access for public

Building at the Landfill

- Access convenient for public
 - Don't travel same roads as trash trucks
- Locate on virgin soil if possible
- Excavation of trash may be necessary
- Geotechnical study
- Methane gas monitoring & venting

Fire Department Issues

- Extreme Fire Hazard Zone
 - Fire sprinklers & hydrant
 - Continuous water supply
 - 20 minute flow containment
 - Fire alarm monitoring system
 - Re-approval of plans required when water supply design changes

Building Department Issues

- Geotechnical
 - Building in area of trash
- Occupancy Rating
 - Office vs. working area
- Restrooms
 - Permanent facility requires permanent restrooms
- ADA Compliance
- Electrical
 - Explosion Proof?

Design Considerations

- Office/break room
 - Clean environment
 - Weather-tight
 - Computer/phone/utility needs
 - Paperwork storage and working area
- Water and sewer
 - Eyewash/shower
 - Restroom
 - Fire dept. requirements
- Traffic flow
 - Arterial street access
 - Facility access
 - Staging area location

Design Considerations (cont.)

- Rainwater intrusion
 - Roof eaves & gutters
 - Fence fabric
 - Facility perimeter curbing
 - Concrete & asphalt drives sloped away
- Recessed floor
 - Water accumulation
 - Access ramps
- Forklift Use
 - Traffic rated materials
- Supply storage space
- Future programs (MEP, Universal Waste, New Equipment)
 - Utilities/space requirements

Invitation For Bid Process

- ◆ 11/98 First on-call A&E
 - Engineer estimate \$177,036
- ♦ 9/99 1st IFB
 - No bids received
- Post mortem conducted
- **♦** 6/00 2nd IFB
 - Engineer estimate \$383,148
 - Received/rejected 1 bid of \$948,332
- ◆ 4/01 Second on-call A&E redesign
 - Engineer estimate \$403,000
- ♦ 9/03 3rd IFB
 - Engineer estimate \$500,000
 - Received/accepted 1 bid of \$890,000

Show Me The Money!

- **CIWMB HHW Grants**
 - **\$151,443**
 - 9/99 to 3/01
 - Awarded to design & construct
 - Used for design and trash excavation
 - **\$300,000**
 - 9/01 to 3/04
 - Awarded to design & construct
 - Construction began 1/04
 - Used for site prep and concrete work

Top Ten Lessons Learned

- 1. Don't Cut Corners!
 - **Procure a knowledgeable A/E firm**
 - Architect with HHWCC design & permit approval experience
 - Engineer that understands landfill & grading issues
- 2. Teamwork is Essential
 - Draw on in-house and out-source experts
- 3. Keep Project Forward Focused
 - Team with project manager to drive schedule
- 4. No Fire Dept Surprises!
 - Meet with Fire Department early in process
- 5. KISS
 - Clear and simple bid documents
 - Unique Project Wording is Important

Top Ten Lessons Learned

- 6. Consider Your Options Early
 - Partner with a private company
 - Identify existing building or property
 - ✓ Landfill as a last resort
- 7. Reality Check while being Optimistic
 - Time to design & construct takes longer than you think
- 8. Don't Budget on a Guesstimate
 - Not a routine project continual modifications increase costs
 - Be prepared construction costs 2x or 3x higher than estimate
- 9. CIWMB Grants have Limited Time and Money
 - Obtain separate grants for design and construction
- 10. Patience/Persistence You'll Need A Lot of It